

# METHOD AND APPARATUS FOR REDUCING PEAK TO AVERAGE POWER RATIO IN A MULTI-CARRIER MODULATION COMMUNICATION SYSTEM

## ABSTRACT

5

A probability distribution transformer (110) in a multi-carrier modulation (MCM) transmitter (101) receives a MCM signal comprising data packets that represent amplitude values, where the amplitude values are characterized by a Gaussian probability density function. The probability distribution transformer (110), which is provided by a number of  
10 piecewise linear transforms, produce a transformed MCM signal comprising transformed data packets which represent transformed amplitude values, where the transformed amplitude values are characterized by a uniform probability density function. When transmitted, the transformed MCM signal results in reduced peak-to-average power ratio  
15 (PAPR). In a corresponding MCM receiver (102), a probability distribution inverter (180) inverts the transformation.